

IC CARD SYSTEM COMPATIBLE WITH BANK ACCOUNT SYSTEM

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an IC card system compatible with an existing bank account system.

2. Description of the Prior Art

Recent times have come to be known as the "cashless age", where people can purchase commodities without paying in cash; instead using a credit card issued by a credit card company.

Known examples of conventional credit cards include bank cards, plastic cards, embossed cards, magnetic stripe cards, and the like. However, due to their particular structure, these cards can be easily forged and then use illegally.

In order to solve the above problems, as described in U.S. Pat. Nos. 3,906,460, 3,971,916, 4,105,156, 4,211,919, and 4,382,279, an IC (integrated circuit) card has been proposed wherein an IC circuit storing a personal identification number (also known as a "PIN") and the like is built into a card so as not to read out the personal identification number. Such an IC card system, combining the IC card and card terminal, has been developed.

In view of the recent practical application of the IC card system, introduction of IC card system is discussed in banks.

Conventional IC card systems are quite different from an existing bank account system. Therefore, the existing system cannot be directly used, and an economical loss is considerable.

Since, in a conventional bank account system using a magnetic stripe card, the on-line system is suspended during holidays and at night, real-time account transactions cannot be performed, and improvement thereof is also demanded.

In the conventional bank account system using the magnetic stripe card, a customer wishing to pay money into the account of a third party must fill out a specified bank form, including such details as the payee's account number and the like, and then take it to a cashier.

Obviously, such a transaction is cumbersome and time-consuming, and sometimes is rejected because of erroneous filling out of the form. The inconvenience of performing such a transaction becomes even more apparent when it must be carried out on a regular basis—for example, when it is the same payee in each transaction. Naturally, therefore, anything which offers to simplify, and thus speed-up, such transactions would be welcomed.

In addition, since many of the above cards are designed for a specific purpose, such as a credit card, a debit card, and so forth, this will often result in the cardholder having to carry a number of different cards at all times, with the inconvenience that this entails.

The present invention has been conceived in consideration of the above situation, and has as its object to provide an IC card system which is compatible with an existing bank account system without great expenditure and which allows off-line transactions to be performed by use of an IC card.

Another object of the present invention is to provide an IC card system which enables simple, error-free payment to be made into a specified bank account, by

using data associated with remittance operation stored in an IC card.

A further object of the present invention is to provide an IC card system in which a single IC card can function as a credit card, a debit card, and the like, thereby simplifying the cardholder's card-carrying requirements and resulting in greater convenience of use.

SUMMARY OF THE INVENTION

These and other objects of the invention are achieved by an IC card system which comprises an IC card device which contains at least one IC (integrated circuit) chip having a first memory for storing transaction data, a second memory for storing a personal identification number (PIN), and a comparator for comparing the PIN data stored in the second memory with an externally entered PIN. The IC card system additionally comprises a terminal device for communicating various items of data to the IC card device when the card is inserted therein and electrically connected thereto, and a host computer which is installed in a bank, is coupled in an on-line manner to the terminal device, and has a first file for a first account and a second file for a second account for each holder of the above type of IC card device. The first account file is a conventional type file. The second account file is reserved for transactions involving the IC card device. An arbitrary amount can be transferred between the first and second account files.

In accordance with the invention, operations such as "deposit", "withdraw, or draw", "transfer", "remit", "balance inquiry", "print-out of transaction history", and the like can be performed in conjunction with an existing bank account system, thereby enabling considerable savings to be achieved through not having to make major alterations to, or replace outright, the present system. When an IC card is combined with an IC card reader/writer, off-line transactions can be performed. Therefore, transaction using the IC card can be performed outside a bank's normal hours of business, and hence, customer service can be improved.

A remittance list is registered in an IC card as data associated with remittance. When the IC card is inserted in an ATM (Automatic Teller Machine), installed in each branch of a bank, and a specific payee is designated, remittance to a specified bank account can be carried out automatically, i.e. without the need to fill out a detailed bank form, to be handed to a cashier. Thus, the previous cumbersome remittance procedure can be dispensed with, and the risk of error, when filling out the remittance form, can be eliminated, thereby enabling payment into a predetermined account to be accomplished easily and reliably.

Additional payees can be registered in the IC card remittance list as and when required, thereby increasing the versatility and convenience of the card, and thus enabling the bank to provide an improved service to its card-holding customers.

In addition, since a single IC card can be used both as a debit card and a credit card, the number of cards a cardholder needs to carry can be reduced to the minimum, unlike in the conventional case where an individual must carry a number of cards, each designed for a specific purpose. Therefore, the IC card of the invention is much more convenient, versatile, and easier to use.